Please replace the paragraph beginning at line 19 of page 22 with the following amended paragraph:

- - After NT units of the desired size are obtained, the cells are mechanically removed from the zona and are then used to produce embryonic or stem-like cells and cell lines. This is preferably effected by taking the clump of cells which comprise the NT unit, which typically will contain at least about 50 cells, washing such cells, and plating the cells onto a feeder layer, e.g., irradiated fibroblast cells. Typically, the cells used to obtain the stem-like cells or cell colonies will be obtained from the inner most portion of the cultured NT unit which is preferably at least 50 cells in size. However, NT units of smaller or greater cell numbers as well as cells from other portions of the NT unit may also be used to obtain ES-like cells and cell colonies. The cells are maintained in the feeder layer in a suitable growth medium, e.g., alpha MEM supplemented with 10% FCS and 0.1 mM beta-mercaptoethanol (Sigma) and L-glutamine. The growth medium is changed as often as necessary to optimize growth, e.g., about every 2-3 days. - -

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IN THE CLAIMS:

Kindly cancel claims 1-35, and add new claims 36-87 set forth below:

36. A method for producing a nuclear transfer unit having genomic DNA of one mammalian species and mitochondria of a different mammalian species, comprising:

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(i) removing the genomic DNA from a mammalian oocyte;

(ii) inserting a differentiated mammalian donor cell, or the nucleus of said cell, into the oocyte under conditions suitable for the formation of a nuclear transfer unit so that a nuclear transfer unit is formed, wherein said oocyte and said differentiated cell are from different mammalian species;

(iii) activating the resultant nuclear transfer unit; and

(iv) culturing the activated nuclear transfer unit to produce a multicellular structure.

37. The method of claim 36, wherein step (ii) further comprises fusing the differentiated cell and the oocyte.

38. The method of claim 37, wherein fusion is effected by electrofusion.

39. The method of claim 36, wherein the step of activating the nuclear transfer unit comprises exposing said nuclear transfer unit to an ionophore.

40. The method of claim 36, wherein said differentiated donor cell is a non-embryonic cell.

41. The method of claim 36 wherein the differentiated donor cell is a germ cell.

42. The method of Claim 36, wherein the differentiated donor cell is a somatic cell.

43. The method of claim 36, wherein the differentiated donor cell is selected from the group consisting of epithelial cells, neural cells, epidermal cells, keratinocytes, hematopoietic cells, melanocytes, chondrocytes, B lymphocytes, T lymphocytes, erythrocytes, macrophages, monocytes, mononuclear cells, fibroblasts, and muscle cells.

44. The method of claim 36, wherein the differentiated donor cell is from an organ selected from the group consisting of skin, lung, pancreas, liver, stomach, intestine, heart, reproductive organs, bladder, kidney, urethra, and other urinary organs.

45. The method of claim 36 wherein the differentiated donor cell is a fibroblast.

46. The method of claim 36 wherein the differentiated donor cell is a human cell.

47. The method of claim 61 wherein the differentiated donor cell is a human epithelial cell or a human keratinocyte.

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48. The method of claim 36 wherein the differentiated donor cell is from an ungulate.

49. The method of claim 36, wherein the oocyte is from a mammal selected from the group consisting of sheep, bovines, ovines, pigs, horses, rabbits, goats, guinea pigs, mice, hamsters, rats, and primates.

50. The method of claim 49, wherein the oocyte is from a primate.

51. The method of claim 36, wherein the oocyte is from an ungulate.

52. The method of claim 51, wherein the oocyte is from an ungulate selected from the group consisting of bovines, ovines, porcines, equines, caprines, and buffalo.

53. The method of claim 52, wherein the oocyte is a bovine oocyte.

54. The method of claim 36, wherein the differentiated donor cell is a human cell and the oocyte is a bovine oocyte.

55. The method of claim 36, comprising culturing said activated nuclear transfer unit on a feeder layer of fibroblast cells to produce a multicellular structure.

56. The method of claim 36, further comprising isolating an embryonic cell from the multicellular structure produced by the cultured nuclear transfer unit.

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57. The method of claim 56, comprising isolating an embryonic cell from a multicellular structure of about 2 to 400 cells.

58. The method of claim 36, further comprising culturing said activated nuclear transfer unit to produce a blastocyst.

59. The method of claim 58, further comprising isolating an embryonic cell from the blastocyst.

60. The method of claim 59, further comprising culturing an embryonic cell isolated from the blastocyst, and producing a cell line from said embryonic cell.

61. An isolated embryonic cell produced by the method of claim 56, which cell is not itself an embryo.

62. The isolated embryonic cell of claim 61, which cell has non-bovine genomic DNA and bovine mitochondria.

63. The isolated embryonic cell of claim 61, which cell has human genomic DNA and mitochondria of a non-human mammal.

64. The isolated embryonic cell of claim 61, which cell has human genomic DNA and bovine mitochondria.

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65. An isolated embryonic cell which is not itself an embryo, which cell has genomic DNA of one species of mammal and mitochondria of a different species of mammal.

66. The isolated embryonic cell of claim 65, which cell has human genomic DNA and non-human mitochondria.

67. The isolated embryonic cell of claim 65, which cell has human genomic DNA and bovine mitochondria.

68. A cell of the cell line produced by the method of claim 60.

69. The cell of claim 68, which cell has non-bovine genomic DNA and bovine mitochondria.

70. The cell of claim 68, which cell has human genomic DNA and mitochondria of a non-human mammal.

71. The cell of claim 70, which cell has human genomic DNA and bovine mitochondria.

72. The method of claim 60, further comprising genetically altering the genomic DNA of a cell of said cell line by adding, modifying, substituting, or deleting one or more genes.

73. The method of claim 72, wherein the genome of said cell is genetically altered by addition, modification, substitution, or deletion of one or more genes that encode an enzyme, a growth factor, or a cytokine.

74. The method of claim 72, wherein the genome of said cell is genetically altered by a method comprising homologous recombination.

75. A cell having genetically altered genomic DNA produced by the method of claim 72.

76. The cell of claim 75, which cell has genetically altered, non-bovine genomic DNA and bovine mitochondria.

77. The cell of claim 75, which cell has genetically altered, human genomic DNA and mitochondria of a non-human mammal.

78. The cell of claim 75, which cell has genetically altered, human genomic DNA and bovine mitochondria.

79. The cell of claim 75, the genome of which is genetically altered by a method comprising homologous recombination.

80. The cell of claim 75, the genome of which is genetically altered by addition, modification, substitution, or deletion of one or more genes that encode an enzyme, a growth factor, or a cytokine.

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81. A cultured cell that is derived from an embryonic cell and has genetically altered genomic DNA of one species of mammal and mitochondria of a different species of mammal; which cultured cell is not itself an embryo or part of an embryo.

82. The cultured cell of claim 81 that has genetically altered, non-bovine genomic DNA and bovine mitochondria.

83. The cultured cell of claim 81 that has genetically altered, human genomic DNA and non-human mitochondria.

84. The cultured cell of claim 81, which cell has genetically altered, human genomic DNA and bovine mitochondria.